

Health Advisory: Potential Health Effects Associated with Hydrazine and Satellite Reentry

2-20-08

This document will be updated as new information becomes available. The current version can always be viewed at <http://www.dhss.mo.gov>

The Missouri Department of Health & Senior Services (DHSS) is now using 4 types of documents to provide important information to medical and public health professionals, and to other interested persons:

Health Alerts convey information of the highest level of importance which warrants immediate action or attention from Missouri health providers, emergency responders, public health agencies, and/or the public.

Health Advisories provide important information for a specific incident or situation, including that impacting neighboring states; may not require immediate action.

Health Guidances contain comprehensive information pertaining to a particular disease or condition, and include recommendations, guidelines, etc. endorsed by DHSS.

Health Updates provide new or updated information on an incident or situation; can also provide information to update a previously sent Health Alert, Health Advisory, or Health Guidance; unlikely to require immediate action.

Health Advisory
2-20-08

**FROM: JANE DRUMMOND
DIRECTOR**

**SUBJECT: Potential Health Effects Associated with Hydrazine and
Satellite Reentry**

On February 20, 2008 the Centers for Disease Control and Prevention (CDC) issued a Health Advisory to address potential health and safety threats associated with the reentry of an uncontrolled U.S. government satellite into the earth's atmosphere within the coming days. Guidance concerning this reentry has also been made available to DHSS from other federal partners, including the Environmental Protection Agency and the Federal Emergency Management Agency. Because the satellite's fuel contains the toxic chemical **hydrazine**, it is possible that the reentry of the satellite could pose a public health threat if pieces of it fall into populated areas. The risk of health effects related to the satellite is considered to be low, and the possibility of debris entry into Missouri is low. However, DHSS is encouraging health officials, clinicians, and first responders to review information about the health effects related to hydrazine to prepare in case their communities are affected by satellite debris.

How can hydrazine affect my health?

Hydrazine is a clear, colorless liquid with an ammonia-like odor. Hydrazine is highly reactive and easily catches fire. It can easily evaporate to the air and can dissolve in water. In soil, hydrazine may stick to particles. In each of these forms, hydrazine breaks down quickly into less harmful compounds.

- Breathing hydrazine for short periods may cause coughing and irritation of the throat and lungs, convulsions, tremors, or seizures.
- Dermal contact may cause redness, pain, and burns.
- Eating or drinking small amounts of hydrazine may cause nausea, vomiting, uncontrolled shaking, and inflammation of the nerves, drowsiness, or coma.
- If you are exposed to substances such as hydrazine many factors will determine whether harmful health effects will occur and what the type and severity of those health effects will be. These factors include the dose (how much), the duration (how long), the route or pathway by which you are exposed (breathing, eating, drinking, or skin contact), the other chemicals to which you are exposed, and your individual characteristics such as age, sex, nutritional status, family traits, life style, and state of health.
- A small number of case studies of acute exposure to hydrazine in people suggest that your lungs, liver, kidney, and central nervous system may be injured if you breathe in hydrazine or get it on your skin.

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What should you do if you become exposed to hydrazine from the break-up of the satellite?

- Immediately move away and upwind from the source of the chemical.
- **First Aid for Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
- **First Aid For Skin:** In case of contact, flush skin with water. Wash clothing before reuse.
- **First Aid For Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

If you experience any difficulty breathing or irritation of your throat or lungs see a physician as soon as possible. Tell them you were exposed to the hydrazine from the satellite break-up. They will monitor your symptoms and treat you to ensure that your symptoms do not get worse. A single, **low dose** short-term exposure such as the type possibly occurring from this situation is very unlikely to cause any long-term adverse health effects.

What should you do if you see satellite debris crash?

- If you see the satellite crash, call your local law enforcement agency or 911 to report the crash. DO NOT APPROACH THE CRASH SITE.
- Do not get close to the debris as it could be very hot and the possibility exists that hydrazine could still be present and be released from any movement of the debris.

Additional information about hydrazine can be found at <http://emergency.cdc.gov/agent/hydrazine/>, including the following topics:

- Frequently asked questions about hydrazine (<http://www.atsdr.cdc.gov/tfacts100.html>)
- Toxicologic & adverse health effect information about hydrazine (<http://www.atsdr.cdc.gov/toxprofiles/tp100.html>)
- NIOSH Pocket Safety guide to chemical hazards on hydrazine (<http://www.cdc.gov/niosh/npg/npgd0329.html>)
- Chemical Emergencies Overview (<http://emergency.cdc.gov/chemical/overview.asp>)
- Emergency preparedness (<http://emergency.cdc.gov/preparedness/>)

You can also call the Missouri Department of Health and Senior Services at 573-751-6161 or 800-392-0272 for further information.